इंटरनेट मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

"जानने का अधिकार, जीने का अधिकार"
Mazdoor Kisan Shakti Sangathan
"The Right to Information, The Right to Live"

"पुराने को छोड नये के तरफ"
Jawaharlal Nehru
"Step Out From the Old to the New"

IS 9829-4 (1986): Metal bone screws, Part 4: Screws with asymmetrical thread, conical under surfaces [MHD 2: Orthopaedic Instruments, Implants and Accessories]

"ज्ञान से एक नये भारत का निर्माण"
Satyanarayan Gangaram Pitroda
"Invent a New India Using Knowledge"

Act Number 22 of 2005
The Indian Parliament
RIGHT TO INFORMATION

Made Available By
Public.Resource.Org

"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

BLANK PAGE

BRUTUM FULMEN
IGNORANTIA JURIS NON EXCUSAT
PROTECTED BY COPYRIGHT

UDC 615·465 : 621·882·2·082 : 616·71-089·843

IS : 9829 (Part 4) - 1986

Indian Standard

SPECIFICATION FOR METAL BONE SCREWS

PART 4 SCREWS WITH SYMMETRICAL THREAD, CONICAL UNDER-SURFACES

Orthopaedic Instruments and Accessories Sectional Committee, CPDC 24; Implant Accessories Subcommittee, CPDC 24 : 1 [Ref : Doc : CPDC 24 (1848)]

1. Scope — Specifies dimensional and other requirements for metal bone screws used in orthopaedic surgery having symmetrical threads and heads with conical under-surfaces. Both single slot and cruciate recess (which may be a modified Phillips socket) are specified as drive elements but not as alternatives.

2. Code for Screw Thread

2.1 The following code shall be used to distinguish the type of thread of screws conforming to this standard:

Type of Thread	*Code*
Symmetrical thread	HC

3. Shape and Dimensions — As given in Fig. 1 to 3.

3.1 The length of the screw shall be as follows:

Up to 50 mm	in steps of 2 mm
50 to 110 mm	in steps of 5 mm

3.2 Screw threads shall be in accordance with IS : 4218 (Part 2)-1976 ISO metric screw threads : Part 2 Diameter pitch combinations (*first revision*)' with the exception of the following:

The pitch of the screws HC 3·5, HC 3·9, HC 4·2 shall be the same as 1·27 mm. Suitable flutes may be added to make the screw self-tapping.

3.3 A modified Phillips socket may be used. The maximum depth of the socket shall be such that the torque strength of the screw is not reduced. The slot shall penetrate to 30 percent edge width (minimum) but not intersect below the bottom edge.

4. Material — Shall be according to 3 of IS : 5347 (Part 1)-1985 'Requirements for orthopaedic implants : Part 1 General requirements (*second revision*)'.

5. Workmanship and Finish — The screws shall be symmetrical about its centre line. The threads shall be well formed and cleaned. The surfaces of the screw shall be free from cracks, draw marks, pits, burrs, surface contamination and impregnated foreign particles. The screws shall be polished and passivated. The screws shall be examined under 10× magnification for surface contamination.

6. Corrosion Resistance Test — Shall be according to 5.1 of IS : 5347 (Part 1)-1985.

7. Packing — Shall be as agreed to between the purchaser and the supplier.

8. Marking — Each packet containing the screws shall be clearly and indelibly marked with the following:

a) Name or trade-mark of the manufacturer;

b) Designation of the material indicated by the number and the name of the relevant standard for the material; and

c) Size, code and type of thread.

8.1 *ISI Certification Marking* — Details available with the Indian Standards Institution.

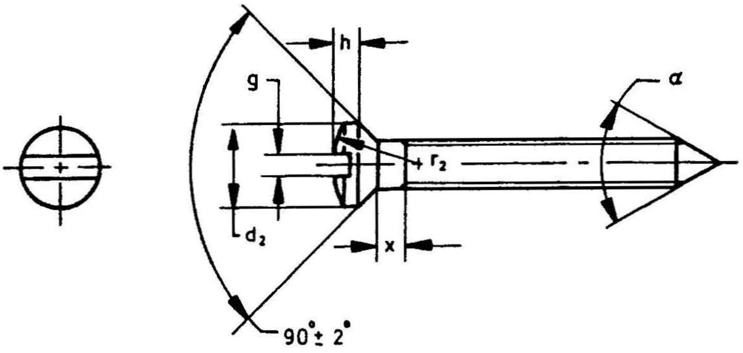
9. Sampling — A recommended sampling scheme and criteria for acceptance is given in Appendix A.

Adopted 24 January 1986

© July 1986, ISI

Gr 2

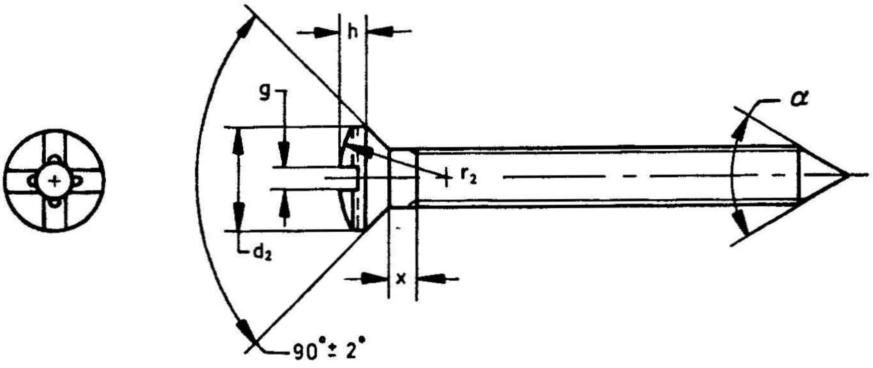
INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002



Code and Diameter of Thread	d_2	g	h	r_2	x *Max*	α
HC 2·9	4·62 to 6·10	1·25 to 1·40	1·5 to 2·0	5	1·6	Optional for example 60°

All dimensions in millimetres.

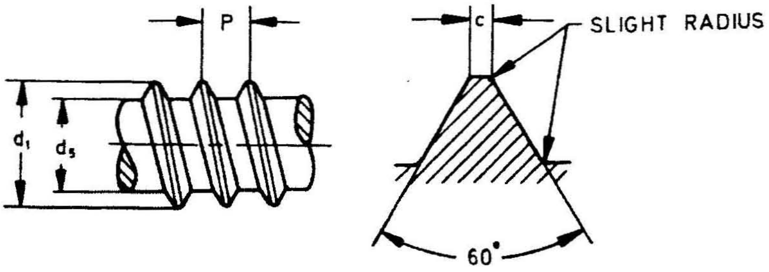
FIG. 1 SCREW WITH SINGLE SLOT RECESS



Code and Diameter of Thread	d_2	g	h	r_2	x *Max*	α
HC 3·5 HC 3·9 HC 4·2	5·8 to 6·5	1·25 to 1·40	1·5 to 2·0	6·35	1·6	Optional for example 60°

All dimensions in millimetres.

FIG. 2 SCREW WITH CRUCIATE RECESS



Code and Nominal Diameter of Thread	d_1		d_5		P	C
	Min	*Max*	*Min*	*Max*		*Max*
HC 2·9	2·79	2·90	2·03	2·18	1·06	0·1
HC 3·5	3·43	3·53	2·51	2·64	1·27	0·1
HC 3·9	3·78	3·91	2·77	2·92	1·27	0·1
HC 4·2	4·09	4·22	2·95	3·25	1·27	0·1

All dimensions in millimetres.

FIG. 3 THREAD

APPENDIX A

(*Clause* 9)

SAMPLING AND CRITERIA FOR CONFORMITY FOR METAL BONE SCREWS

A-1. Lot — In a consignment, all metal bone screws of same type and dimensions shall constitute a lot. Each lot shall be tested for requirements of this specification.

A-2. From each lot, samples shall be drawn at random for testing the requirements for shape and dimensions, material, workmanship and finish and also marking on each screw. The sample screws shall be selected at random with the help of random number tables (*see* IS : 4905-1968 'Methods for random sampling'). The number of screws to be drawn depends on the lot size and shall be in accordance with col 1 and 2 of Table 1.

TABLE 1 SCALE OF SAMPLING

Lot Size	Sample Size
Up to 50	13
51 „ 150	20
151 „ 300	32
301 and above	50

A-3. All the sample screws selected as per Table 1 shall be successively examined for various requirements given in **3**, **4**, **5** and **8** of this specification. Any screw failing in one or more of the requirements shall be termed defective. There shall be no failures if the lot is to be accepted under this clause.

A-3.1 If there is one or more defects in the sample, the lot may be subjected to 100 percent inspection if agreed to between the purchaser and the supplier.

A-4. The lot which has been found acceptable under **A-3** shall be tested for corrosion resistance test. For this purpose, five screws shall be selected at random from among the samples already drawn and be subjected to corrosion resistance test according to **6**. The lot will be termed satisfactory if there is no failure in this test.

EXPLANATORY NOTE

In the preparation of this standard, considerable assistance has been derived from ISO 5835/4 'Implants for surgery—Metal screws—Dimensions—Part 4 : Screws with symmetrical thread, conical under-surfaces'. The main deviation in this standard is that the angle of countersunk is 90° against 80° of ISO standard and additional details of length of screw threads are specified.

Printed at Printrade, New Delhi, India